<u>REMARKS</u>

I.   INTRODUCTION

In response to the Office Action dated June 18, 2007, no claims have been canceled, amended or added. Claims 1-7 remain in the application. Re-examination and re-consideration of the application is requested.

II.   PRIOR ART REJECTIONS

On pages (2)-(5) of the Office Action, claims 1-7 were rejected under 35 U.S.C. §103(a) as being obvious in view of the combination of U.S. Patent 6,094,652 (Faisal) and U.S. Patent 5,826,258 (Gupta).

Applicants' attorney respectfully traverses these rejections. Specifically, the Applicants' claims are patentable over the references, because the claims contain limitations not taught by the references.

Nonetheless, the Office Action asserts the following:

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faisal (U.S. patent no. 6,094,652) in view of Gupta et al. (U.S. patent No. 5,826,258).
As to claim 1, Faisal teaches a computer-implemented method of accessing information from a collection of data comprising:
receiving a query (see column 3, lines 57-65);
generating an inverse index of the collection of data that is augmented with category hierarchy information (see column 4, lines 26-64); and
generating results to the query in conjunction with the inverse index by performing a search request of the inverse index, and wherein a match to an item in the inverse index also retrieves corresponding category hierarchy information stored with the inverse index (see column 4; lines 38-49).
Faisal does not distinctly disclose using results from the search request with a search request of a relational database management system, and the category hierarchy information is then mapped to items in the relational database management system in performing the search request of the relational database management system.
Gupta et al. teaches this, see column 2, lines 16-40 and see column 9, lines 5-12. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Faisal to include the teachings of Gupta et al. because these teachings would allow users of the system to access current data in a structured manner.

The pertinent portions of Faisal and Gupta referred to above are reproduced below:

-4-

G&C 30571.316-US-C1

Faisal: column 3, lines 57-65

The information retrieval system 100 is cataloged with one or more documents, labeled documents 130 on FIG. 1. The documents 130 may include a compilation of information from any source. For example, the documents 130 may be information stored on a computer system as computer readable text. Also, the documents 130 may be accessed via a network, and stored at one or more remote locations. The content of the documents 130 may include articles, books, periodicals, etc.

Faisal: column 4, lines 26-64

The information retrieval system 100 is also cataloged with theme indexes, labeled theme indexes 170 on FIG. 1. In general, the theme indexes 170 are pointers that identify all the documents in the document repository 130 that include the corresponding theme (i.e., all documents that include thematic information on the corresponding theme). For example, for the theme "computer industry", the theme indexes 170 identify all the documents in the document repository 130 that include thematic information (e.g., a theme) on the topic "computer industry." As discussed more fully below, the theme indexes 170 are used to process user input queries.

The information retrieval system 100 utilizes a knowledge base, labeled 155 on FIG. 1. In general, the knowledge base 155 includes a plurality of nodes that comprise concepts and categories, expressed as terminology augmented to include associations among the concepts and categories. In one embodiment, the knowledge base 155, may contain classification and contextual information based on processing and/or compilation of thousands of documents or may contain information based on manual selection by a linguist. The contents, generation and use of the knowledge base 155 is described more fully below in section "The Knowledge Base."

As shown in FIG. 1, the information retrieval system 100 includes query processing 175. The query processing 175 receives, as input, user queries, and generates, as output, query responses and hierarchical query feedback terms. The query processing 175 accesses documents 130, theme indexes 170, and knowledge base 155 to formulate a response to the user query. As shown in FIG. 1, query processing 175 generates both a query response and hierarchical query feedback terms. One embodiment for generating a query response, including documents in document repository 130 relevant to the query, is described in U.S. patent application Ser. No. 08/861,961, entitled "A Document Knowledge Base Search and Retrieval System", filed May 21, 1997, Inventor: Kelly Wical, which is expressly incorporated herein by reference.

Gupta: column 2, lines 16-40

The present invention provides systems and methods for determining how semistructured information is organized in disparate semistructured resources and generating a wrapper to extract information and to provide structured information (e.g., tuples of a structured query language or SQL database) to a mapper coupled

-5-

G&C 30571.316-US-C1

to a standard relational database engine. In a specific embodiment, a querying agent is provided on top of the mapper. Further according to the invention, structured high-level user queries are processed across the disparate semistructured resources using a plurality of wrappers each dedicated to a particular information source.

In one embodiment, the invention provides a method of generating a wrapper for accessing semistructured information, comprising the steps of: examining the semistructured information to identify patterns of interest that include attributes; generating a description file including regular expressions for the patterns which specify locations of the attributes within the semistructured information; and utilizing the description file to generate a wrapper which provides access to the attributes in the semistructured information as tuples for a relational database system. The wrapper may be automatically generated from the description file by a compiler or interpreter. In preferred embodiments, the semistructured information is in HTML representing a web page at a web site.

Gupta: column 9, lines 5-12

When the dynamic agent receives a query from a user, the agent determines whether there is sufficient data already in the relational database to satisfy the query. Additionally, the agent may determine if the data in the relational database is sufficiently current (e.g., using timestamps). If additional data or information is needed, the agent issues a query to the mapper, which in turn issues queries to the appropriate information sources through the wrappers.

Contrary to the Office Action's assertion, the combination of Faisal and Gupta does not teach or suggest Applicants' claimed invention of generating an inverse index of the collection of data that is augmented with category hierarchy information.

In addition, the combination of Faisal and Gupta does not teach or suggest Applicants' claimed invention of generating results to the query in conjunction with the inverse index by performing a search request of the inverse index, and using results from the search request with a search request of a relational database management system, wherein a match to an item in the inverse index also retrieves corresponding category hierarchy information stored with the inverse index, and the category hierarchy information is then mapped to items in the relational database management system in performing the search request of the relational database management system.

Indeed, nowhere is an inverse index augmented with category hierarchy information mentioned in either Faisal or Gupta, nor are the related functions of searching the inverse index before searching the relational database.

-6-

G&C 30571.316-US-C1

For example, the above portions of Faisal merely describe how theme indexes are pointers that identify documents in a document repository, and how query processing accesses these theme indexes in order to access the documents in the document repository.

Nonetheless, this discussion in Faisal does not teach or suggest inverse indexes that are augmented with category hierarchy information, wherein a match to an item in the inverse index also retrieves corresponding category hierarchy information stored with the inverse index, and the category hierarchy information is then mapped to items in the relational database management system in performing the search request of the relational database management system.

Indeed, the discussion in Faisal is quite different from Applicants' claims. In Faisal, as shown in FIG. 1, the theme indexes are described as being used to access documents in the document repository, not data in the knowledge base. Moreover, it is the knowledge base in Faisal that includes a plurality of nodes that comprise concepts and categories, not the theme indexes.

Contrast this with Applicants' claims, where the query accesses the inverse index, the results of which are then used to access items in the relational database management system. Moreover, Applicants' claims recite that the inverse index is augmented with category hierarchy information, which is mapped to items in the relational database management system.

Finally, the above portions of Gupta do not overcome these deficiencies of Faisal. Gupta merely describes how semistructured information (e.g., regular expressions) is organized to provide structured information (e.g., tuples of an SQL database) using a mapper coupled to a standard relational database engine. However, the cited portion of Gupta is also different from Applicants' claims, in that, in Gupta, if there is in sufficient data in the relational database to satisfy the query, the semistructured information is accessed through the wrappers, whereas, in the Applicants' claims, the query accesses the inverse index to access category hierarchy information, which is then used to access items in the relational database management system.

Consequently, the combination of Faisal and Gupta does not teach or suggest Applicants' independent claims. Moreover, the various elements of Applicants' claimed invention together provide operational advantages over the combination of Faisal and Gupta . In addition, Applicants' invention solves problems not recognized by the combination of Faisal and Gupta .

-7-

G&C 30571.316-US-C1

For example, in Applicants' invention, the RDBMS is used with the inverse index to respond to queries that involve a combination of structured information stored in the RDBMS and unstructured information existing in free text. The search of the unstructured information is performed using the inverse index, while the search of the structured information is performed using the results of the inverse index search. However, in Applicants' invention, the free text information in the inverse index may not always correspond to individual items in the RDBMS. In general, there may be many items in the inverse index that correspond to categories of items in the RDBMS. In order to improve the efficiency of searches involving such items in the inverse index, the inverse index is further augmented with category hierarchy information. Thus, a match to an item in the inverse index will also retrieve corresponding category hierarchy information, which can then be mapped to items in the RDBMS.

Thus, Applicants' attorney submits that independent claims 1, 16 and 32 are allowable over the references. Further, dependent claims 2-15 and 17-31 are submitted to be allowable over the references in the same manner, because they are dependent on independent claims 1 and 16, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-15 and 17-31 recite additional novel elements not shown by the references.

III.   CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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-8-

G&C 30571.316-US-C1